In the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently amended) A method for checking whether an input data record is in a working range of a neural network, wherein working range is defined by the convex envelope formed by training input data records of the neural network, comprising the following steps:

   (a) storing training input data records for the neural network, forming a convex ~~hull~~ envelope by means of the training input data records,

   (b) checking whether the input data record is in the convex envelope ~~hull~~, in

   (i) selecting a number $(d + 1)$ of non-collinear points from the set of training input records,

   (ii) forming a first simplex (S_1) from the selected points,

   (iii) selecting a point (x_i) from the interior of the first simplex (S_i),

   (iv) definition of a path between the input data record and the selected point,

   (v) checking whether there is an intersection point (x_{i+1}) between the path and a facet of the first simplex, and

   (vi) checking whether a second simplex (S_{i+1}) which contains the intersection point and a section of the path can be formed from the number of points from the training input data records.

   (c) delivering result that input data record is inside or outside the convex envelope.

2. (Canceled)

3. The method according to Claim 1, further comprising the steps for checking whether a second simplex may be formed:

   (vii) determining vertices of a facet of the first simplex on which the intersection point is located,

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(viii) selecting a further, non-collinear point from the training input data records,

(ix) forming a simplex (S') from the vertices and the further point,

(x) checking whether the simplex contains a section of straight line, and outputting the simplex as a second simplex, if this is the case,

(xi) exchanging the further point for another, non-collinear point from the set of training input data records and renewed checking.

4. (Canceled)

5. (Previously presented) The method according to Claim 11, wherein a minimum of F being searched for in order to check whether a hyper-plane exists, where

$$F = -\min\left(\frac{k \cdot r_i}{|k|}\right)$$

and where the hyper-plane is represented by the normal vector k and $r_i = p_i - x$, where x is the point defined by the input data record.

6. (Canceled)

7. (Currently amended)   A system for determining at least one predicted value, comprising
        at least one neural network which has been trained using a set of training input data
records,
        means for checking whether one of the input data record for the neural network is in the
convex envelope hull which is formed by the training input data records, and
        further comprising
a hybrid model which contains at least a first neural network and a second neural network, the
first neural network having been trained using a set of first training input data records, and the
second neural network having been trained using a set of second training input data records, the
checking means being embodied in such a way that for a first input data record for the first neural
network it is checked whether the first input data record is in the convex hull which is formed by

the first training input data records, and that it is checked for a second input data record for the second neural network whether the second input data record is in the convex hull which is formed by the second training input data record, the assignment of the first input data record to the first neural network and the assignment of the second input data record to the second neural network being carried out in automated fashion from a composite data record.

8. (Previously presented) A system for determining at least one predicted value, comprising

at least one neural network which has been trained using a set of training input data records,

means for checking whether one of the input data record for the neural network is in the convex envelope which is formed by the training input data records,
further comprising a hybrid model which contains at least a first neural network and a second neural network, the first neural network having been trained using a set of first training input data records, and the second neural network having been trained using a set of second training input data records, the checking means being embodied in such a way that for a first input data record for the first neural network it is checked whether the first input data record is in the convex envelope which is formed by the first training input data records, and that it is checked for a second input data record for the second neural network whether the second input data record is in the convex envelope which is formed by the second training input data records, the assignment of the first input data record to the first neural network and the assignment of the second input data record to the second neural network being carried out in automated fashion from a composite data record.

9. (Original) The system according to Claim 8, wherein the checking means being embodied in such a way that the checking is carried out in accordance with a method according to Claim 1.

10. (Original) A computer digital storage medium program product for carrying out a method according to Claim 1.

11. (Previously presented) A method for checking whether an input data record is in a working

range of a neural network, wherein working range is defined by the convex envelope formed by training input data records of the neural network, comprising the following steps:

(a) storing training input data records for the neural network, forming a convex hull by means of the training input data records,

(b) checking whether the input data record is in the convex hull, in checking whether there is a hyper-plane which contains the input data record so that all the training input data records are located on one side of the hyper-plane.

(c) delivering result that input data record is inside or outside the convex envelope.

12. (Previously presented) A method for checking whether an input data record is in a working range of a neural network, wherein working range is defined by the convex envelope formed by training input data records of the neural network, comprising the following steps:

(a) storing training input data records for the neural network, forming a convex hull by means of the training input data records,

(b) checking whether the input data record is in the convex hull, in

(i) selecting an initial vector $\lambda^{(0)} = (\lambda_1,...,\lambda_n)$ with $\lambda_1 + ... + \lambda_n = 1$ and $\lambda_j \geq 0$ $(j=1,...,n)$, where preferably $\lambda_j = \dfrac{1}{n}$ is selected,

(ii) selecting a matrix M in such a way that the lines matrix $\hat{P}^{(i)} := M \cdot P^{(i)}$ are orthonomal,

(iii) calculating $\lambda = \lambda^{(i)} + \hat{P}^{(i)T} \cdot (\hat{x} - \hat{x}^{(i)})$, where $\hat{x}^{(i)} := \hat{P}^{(i)} \lambda^{(i)}$,

(iv) checking whether all $\lambda_j \geq 0$ (for $j=1,...,n$),

(v) deleting all components from the matrix $P^{(i)}$ and from the vector $\lambda^{(i)}$, which infringe the secondary condition $\lambda_j \geq 0$ (for $j=1,...,n$),

(vi) renewing calculating of λ, and

(c) delivering result that input data record is inside or outside the convex envelope.